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Developing Home Market For Florida Citrus Fruits

Citrus Fruits, Marketing

BY ISABELLE S. THURSBY

ASSISTANT ECONOMIST IN FOOD PRESERVATION,
AT MEETING OF FLORIDA STATE
HORTICULTURAL SOCIETY

A teacher asked a group of first grade children a few years ago, "Why do you like Christmas?" Hands waved frantically and eager voices shouted, "Because Santa Claus always brings me an orange." There really are, unfortunately, hundreds of children in Florida, who look upon oranges as luxuries and who associate them with Christmas and Santa Claus. There are hundreds of grown-ups in this state who know little about our glorious array, not only of citrus fruits but other fruits, that grow luxuriantly here. While we have been busy developing outside markets, we have failed to capture one of our very best bets.

As I was thinking over the subject assigned me, I kept trying to figure how many oranges it would take for every child to have at least one a day, every day in the year, and how many car loads of citrus fruits would be consumed here at home if every family in Florida knew its food value and used it freely in some form every day in season, as should be our privilege and pleasure, in this land of bounteous supply — which even now there are those who call it "over production."

It is only within comparatively recent years that the average person began looking upon fruit as food essential to health. To many it is still a frill and belongs in the luxury class.

The established importance of citrus fruits in nutrition is so generally well known to this audience, and their importance as sources of the needed vitamins and minerals and have been discussed so often before this body, their importance in clinical medicine, in both preventing and curing disease, I need not dwell upon this phase of the subject.

We do, of course, stress the nutritional value of our citrus fruits, as we work in the interest of a more adequate food supply for our Florida rural people, in particular.

We, of course, stress their Vitamin C content as one of the necessaries of human life, and the fact that of the citrus fruits, grapefruit, when properly canned, has practically the same vitamin value as the fresh.

We feel in home demonstration work that we are doing a good piece of advertising especially in the citrus producing section, in demonstrating the many delightful methods of utilization. We know that acquaintance brings liking. This is as true of foods as of persons. To know our grapefruit, for instance, is to like it. The better known, the better liked — if they are good!

This large, yellow fruit with its fragrant aroma and juicy content — whether you call it grapefruit or pomelo, by either name it tastes as sweet, or if sweet is not exactly the correct term for a fruit that combines just enough sour to be neither sweet nor sour, but both of the most intriguing and piquant blend — well then, would you not call it delectable? That's the word, delectable!

Just as it is a happy experience to meet an old friend in a new and becoming dress, just so it is to meet a familiar food in a novel and appetite-intriguing dish. So, we introduce our grapefruit and its kin to home folks and visitors alike, in our canning centers and in our so-called utilization schools. As you have all observed — and will remember — for many years there was one standard serving for a grapefruit — to cut it in half and serve it thus as a first course. Many still think of grapefruit in such a picture. As a matter of fact, the flavor of grapefruit combines with other foods to make many delightful combinations.

Not only grapefruit but all citrus fruits are especially excellent in sal-

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Some New Aspects Of Gummosis And Psorosis Of Citrus Trees In Florida

BY DR. ARTHUR S. RHOADS

PLANT PATHOLOGIST, COCOA LABORATORY OF THE FLORIDA AGRICULTURAL EXPERIMENT STATION

Address Delivered at the Forty-Ninth Annual Meeting of the Florida State Horticultural Society at De Land, May 6, 1936

In connection with experiments of the past several years to determine the value of the bark-scraping method of treatment for the control of gummosis and psorosis of citrus trees, it has been observed repeatedly that grapefruit trees with advanced cases of gummosis and orange trees with advanced cases of psorosis usually have failed to respond satisfactorily to the treatment. In some instances these diseases have remained inactive or quiescent following the initial treatment, but became active again the following year, thus requiring retreatment. In those cases which continued to be more or less active year after year it was noted that, even where the development of gummosis or psorosis was checked fairly well at the places treated, judging by the cessation of gumming and the failure of the bark to die over areas of any great size, it was frequently found, at the inspection the following year, that they had broken out at points farther up and down on the attacked trunks or limbs. In some instances they might also break out anew in the old areas which had been treated 2 or 3 years previously and had apparently healed. Since the treatment each year extended well in advance of any gumming or discoloration in the inner bark, this continued progress of these bark diseases could not, in most cases, be attributed to inadequate scraping.

Even in those cases where the bark appeared to have healed without any killing sufficiently extensive to affect the life of the trees, they soon began to decline, often a limb at a time, until eventually the entire tree was involved in the decline. In most instances where other factors, particularly blight, were not involved, the decline extended over a period of several years, the trees becoming less vigorous and bearing less fruit each year until their retention was no longer profitable. The regularity with which many trees declined when these bark diseases, judging by external appearances, did not appear sufficiently active to account for this was quite puzzling. It appeared that, once these diseases progressed beyond a certain point, they frequently became systemic (Fig. 1).

Fig. 1.—Systematic case of gummosis in grapefruit tree in which the disease continued to progress despite treatment by the bark-scraping method each year from 1927 to 1936 inclusive. Note the discoloration of the wood where the front trunk was cut off just before photographing.

That this is true has been demonstrated conclusively by anatomical and cultural studies of the wood of the attached trunks and limbs of grapefruit trees declining from gummosis, and of orange trees declining from psorosis. The wood of such trees, instead of being pale yellowish white, as it should be normally, is frequently extensively discolored, with the central portion light brown. In cross and longitudinal sections of attacked trunks or limbs this brownish central wood is demarked from the external, more or less sound wood by one or more highly irregular, dark brown zones which appear as sinuous lines in sectional preparations (Figs. 2 and 3). The periipheral portion of the wood of such trunks or limbs usually is more or less irregularly discolored pale brown with grayish tinges in places, giving a somewhat mottled appearance in which small discolored areas may be demarked from the adjacent wood by dark brown zones. The discoloration of the outer wood is also frequently accompanied by dark brown flecks. In cross and longitudinal sections this marked discoloration frequently involves almost all the wood of a given trunk or limb, sometimes encroaching within an eighth of an inch of the living bark, or even extending out to the bark in areas where it may be gumming. Not only does this marked discoloration involve nearly all the cross section of attacked trunks or limbs, but it extends for considerable distances longitudinally, and often well in advance of the upper and lower limits of gumming on bark lesions. In trees where either gummosis or psorosis has been active for several years this discoloration of the wood frequently extends from the base of the tree up to a point 5 or 6, or even more, feet above, or well into the main limbs of the trees, Furthermore, this pronounced discoloration of the wood may even extend below the point of the bud union, involving more or less of the wood of the root crown (Fig. 4), particularly in trees on rough lemon stock. In the vicinity where an area of bark has been killed by gummosis or psorosis, or a limb

killed by either of these diseases has been cut off for some time, an exceptionally dark discoloration of the wood usually develops, which, no doubt, is due largely to oxidation.

There also occurs, intermittently throughout the outer layers of trunks and limbs attacked by both gummosis and psorosis, brown zones of closely crowded gum canals which appear as lines in sectional preparations. These may extend for but short distances or be more or less continuous around the wood layers. These zones of gum canals frequently are repeated in the successive growth layers and even 2, 3 or 4 zones may be repeated in quick succession within a single growth layer. Sections of the trunks or limbs involved in gummosis or psorosis show that these zones of gum canals commonly develop for considerable distances beyond the upper and lower limits of gumming in the bark lesions. Their formation begins with the inception of the disease and before there is any evidence of discoloration of the wood, and continues intermittently as long as the disease progresses and the part involved remains living.

The full significance of this extensive discoloration of the wood, of course, is not wholly apparent without cultural and microscopic investigations to determine whether or not any organisms are involved, and their effect upon the wood. From time to time over a period of several years either Phomopsis citri or Diplodia natalensis has been isolated from blocks of the discolored wood taken from sections of trunks or limbs of citrus trees with persistent cases of gummosis or psorosis. No other pathogenic organism has been isolated from the wood of such trees. These particular fungi are to be found throughout Florida wherever citrus groves occur, causing the two well-known stem-end rots of fruit; Phomopsis also causes melanose.

It is by no means necessary, however, to resort to pure culture technique in order to demonstrate the association of an organism with the discolored wood in the trunks of trees declining from gummosis or psorosis. Sections through trunks or limbs of such trees, when kept in moist atmsphere in culture dishes, commonly yield a profuse development of fungous mycelium from the discolored wood. Even on the cut ends of living trunks or large limbs left lying in the laboratory for a few days, sufficient outgrowth of the mycelium usually develops from the central discolored wood to be readily apparent. In the latter case, of course, the continued growth of the mycelium is soon arrested by the dessication of the wood.

Fig. 3.—Cross section, cut at bud union (ground line), of 14-year-old Valencia orange tree declining rapidly from psorosis. Note the dark brown zones and flecks and the extensive discoloration involving nearly all the wood.

Fig. 2.—Cross section of base of gumming grapefruit trunk cut from tree illustrated in Fig. 1, showing the dark brown zones and flecks and the extensive discoloration involving nearly all the wood.

Microscopic examination of the discolored wood reveals more or less evidence of fine thread-like fungous filaments ramifying through the cells in places. Accumulations of brown gum frequently occur near the pitted end walls of the segments of the vessels, or water-conducting elements, and a brownish gum-like substance is of frequent occurrence in the parachyma cells of the medullary rays. Where the wood shows the dark brown zones or flecks the vessels are extensively occluded by gum and great masses of the cells of the bands of wood parenchyma and the parenchyma cells of the medullary rays are filled with a brown gum-like substance.

That the extensive invasion of the wood in the trunks and main limbs of citrus trees by such organisms as Phomopsis citri and Diplodia natalensis exerts a profound effect upon the water conduction and other vital processes of the tree will not be questioned. The discovery of this extensive invasion of the wood by these organisms explains why trees with advanced cases of gummosis and psorosis usually fail to show a marked improvement when treated by the bark-scraping method. While this method of treatment usually is very effective if administered during the early stages of these diseases, the findings here discussed demonstrate that it cannot be effective after the interior of the wood of the attacked trunks or limbs has become extensively invaded and discolored by Phomopsis and Diplodia.

Observations and studies during the past several years do not indicate that these organisms, as a rule, are the primary causes of most of our gummosis in grapefruit and tangerine trees, and certainly they are not the primary cause of psorosis in orange trees. However, in the frequent instances where gummosis of grapefruit trees develops as a result of infection of the wood of untreated pruning wounds and other injuries by Phomopsis and Diplodia, these organisms must be regarded as the primary cause of gummosis. Infection of pruning and other wounds by these fungi takes place much more readily in Tahiti lime and Perrine lemon trees than in the case of grapefruit trees, ocurring commonly even in very young trees. Tisdale* has recently reported the consistent association of these particular fungi with a dieback of young Tahiti lime and Perrine

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*Tisdale, W. B. Diseases of lime trees. Florida State Hort. Soc. Proc. 47 Agric. Exp. Sta. Press Bull. 481, 2 pp., 1936.

Fig. 4.—Longitudinal section of butt of Valencia orange tree illustrated in Fig. 3, showing the extensive discoloration of the wood extending down into the root crown below the bud union.

DEVELOPING HOME MARKET FOR FLORIDA CITRUS FRUITS

(Continued from page 5)

ads of all types, and in any number of dessert combinations of which we need never tire. They may well form the basis of fruit appetizers, salads of all kinds, meat and vegetable accompanients, sauces and garnishes, desserts cooked and uncooked.

We stress that citrus fruits have a variety of uses in cake making. The juice may be used in the cake batter; the pulp and peel in the cake itself, the juice for flavoring both filling and frosting — certainly there is no place for artificial or synthetic flavorings in Florida. The peel — grated, candied or chopped may be used in fine frostings and icings.

We demonstrate the making of orange or grapefruit shortcake — and successfully pit its goodness against the time honored strawberry short cake. Whether or not an orange short cake excells strawberry, is rather a moot question, I admit, tho' personally I have strong prejudices in favor of the orange. But how many times have you ever had any choice in the matter — on our Florida menus? How many times have you ever had the suggestion that an Oronge Upside-down cake is being served, rather than a Pineapple Upside-down cake of the Del Monte brand? With lemon pie voted as the favorite dessert of masculine America, good lemon pie is lamentably scarce on the Florida bill of fare, though in the old Florida wild or Seville orange, we have a pie flavoring that stands second to none, and our Florida chefs and pastry makers should capitalize on its wonderful flavor.

Among products that take a popular place in cooked form and which should become increasingly popular might be mentioned the Orange Crumb Pie; Grapefruit Meringue Pie; Calamondin Cocoanut Pie, with Calamondin Cocoanut Filling and Calamondin Icing, popular with Dade County club members. Orange Dessert Cake, which you will rate your favorite of all citrus cakes and the simplest made — from Polk County. Marmalade Cake, a very delicious one from Alachua; Tangerine Cake, a favorite with our Duval County Home Demonstration Club Women; Lady Flora Cake with a marvelous filling, rich in a mixture of candied citrus fruits and nuts given to us by a club member in Osceola County; a Florida Citrus Fruit Cake whose delicious proportions were also developed in Osceola County; likewise we get an Osceola Citrus Tutti-Frutti cake that is quite as entrancing to look at as it is good to eat. Orange Candied Sweet Potatoes; Orange marmalade sauce served with baked ham, Lamb Chops broiled with orange; grilled grapefruit, but why go on? I could, of course, if we were not pressed for time. Then too, I admit I get hungry when I begin to call by name these particularly nice citrus products.

Sufficient to say, we are endeavoring to bring about a keen appreciation of the wealth of uses to be made of our citrus — oranges, lemons, tangelos, grapefruit, kumquats, orangequats, calamondins and others. These fruits used with pecans and rich, black walnuts from North Florida, we feel Florida women should be enthusiastic and eager to make for her own household and for the tourist's family table as well, the delicious citrus cakes and fancy breads, tarts and pastries, that can be baked so perfectly for an interested appreciative, visiting public — on the alert for something different.

We promote citrus syrups, jellies, marmalades, butters, preserves and conserves — as delicious and wholesome "spreads" for sandwiches, for the breakfast toast, griddle cakes, waffles, hot biscuit and butter or for serving as pudding sauce, and as a dressing for ice cream and sundaes.

Florida citrus fruits, in their diversity of appearance, color, texture and flavor present quite as fascinating a field to the woman with the ladle as they do to the one who bakes and broils.

Some day in the near future, I trust may be found in our home markets, a sweet, spiced grapefruit or other citrus fruit pickle that will become as world famous as Mrs. Kidd's Pin Money Pickles; a citrus marmalade — tangelo — pomelo — as it may be — that will rival the sale of the Dundee products. And why not?

We demonstrate in our work, up and down and across the state, not only to those who belong here, but to our visitors, the value of whose potential influence cannot be overestimated. We have thousands of tourists, registering from every state in the Union and Canada, whom we would do well indeed to acquaint right here in Florida with the many different and delightful uses for our fruits in all their interesting variety, color and form. Why not teach them to to know the different varieties — and how to identify them by name?

A visitor whose home is in Sicily and who operates a book shop in Lake Placid in the summer, expressed the pleasure she had obtained from working in one of our demonstration kitchens on the East Coast. Time plentiful—nothing creative to do—she speaks of the real enjoyment gotten from putting up a quantity of calamondins and other citrus marmalades and preserves—as well as preserves from our beautiful Florida or Surinam cherry. Novelties perhaps, but all exceedingly good. This worker plans to establish a small market for these products whether she returns to Florida or not.

An enthusiastic visitor from Pennsylvania recently told me of her experience in canning, preserving and candying, not only grapefruit, kumquats and other citrus fruits but guavas, surinam cherries and papayas in the same East Coast kitchen and of the pleasure she would gain from being able to share these unusual products with her northern friends when she returned to her home this summer. That's what we call extending the influence of Home Demonstration Work, you might call it—advertising.

Florida has a population of more than 1,250,000, I believe. Our problem is to make our 1,250,000 potential consumers fruit conscious—to develop in them the taste and the desire for citrus fruits and citrus fruit products, and to sell them on the idea that citrus fruit is a health essential and should form an integral part of the menu of every family. Then everybody liking fruit juices—and influenza epidemics just over the horizon—and doctors prescribing it —we'd probably use all our local supply and have to import it from Texas or Palestine.

Joking aside — If we are to set about to develop the home market, we must develop an excellent product for home consumption. People buy inferior products once or twice,

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but many a merchant has sacrificed future business for immediate gain, by allowing a customer to go out of his store with an inferior piece of merchandise.

I visited a farm home once where people came for miles around to buy produce. Its reputation for fresh eggs, fine fat chickens, excellent milk and butter, fine vegetables and fruits, brought customers from all the nearby towns. I was surprised to find food of poor quality on the table. It was really inferior to food I had seen served anywhere. The family provider evidently, went upon the theory that anything was good enough for his wife and children — that they should eat it and like it.

I contend that the family was entitled to as good food as could be raised on that farm. That is the way I feel about Florida folks and citrus fruits. The family I referred to had to eat what the father provided. Florida folk do not have to eat inferior fruits — they can refuse to buy. And they do refuse.

What I am struggling to say is — while we are able to secure quality citrus fruit for our work here in the producing area, I hear many complaints about the poor quality of the fruit sold in North Florida; hear the complaint and see the fruit. For this reason I like to take my own fruit with me to use in demonstrations over that section and I do, whenever possible.

I begin perhaps with the simplest demonstration of removing the hearts of grapefruit — quickly and efficiently — for use in canning, in salads or for dessert. Housewives are most interested and appreciative of learning this procedure. Then we serve the hearts so obtained in our audience. Fruit, fresh fruit served in the simplest possible manner is of course, always desirable. Where could there be a more popular dessert for Florida than the old time favorite — ambrosia — redolent too, of Christmas festivities. Hearts of oranges, hearts of grapefruit mixed with sliced strawberries, loquats or crushed pineapple, sparingly sweetened and chilled — literally a feast for the gods!

But I am digressing — Women over and again say to me, "Miss Thursby, we can't find fruit like this here". Another asks "Is Florida fruit not as good as it used to be or do they just send the culls up here?"

Eight years ago I stated before this Society that green fruit was not a food — but rather a poison — and that if our enlightened conscience would permit us to ship green fruit — over-ripe or frosted fruit, I hoped the State of Florida would have the courage to pass laws to prevent it. The state is at last attempting to do this and these measures deserve our hearty commendation and support.

From out of the state comes another slant on the situation and I have been written:— "I hope you will do what you can to let producers know that the consumers are not with them in this business of artificially coloring green oranges to make them look ripe. Incidentally I shopped all over Washington this week to find some oranges that were not artificially colored, for I wanted especially good juice for a young friend who was ill. I found one lot of very nice Florida pineapple oranges that bore no sign of being artificially colored. The next day I went back and bought more. I am going today to buy still more."

From a very discriminating friend in Georgia I hear — "There is much criticism of green fruit of extremely poor flavor being put upon the market — and that consequently people are beginning to talk and think in terms of Texas grapefruit, especially in the states north of Georgia."

A friend in Knoxville writes, attaching a piece of our labeled orange peel to her letter, "Since you Florida folk have become such gold diggers, I am for California oranges hereafter, when I can find them. What do you think you are doing to your lovely oranges anyway?" This friend used to winter in Manatee County years ago and is well fitted to judge of quality — in Florida Citrus.

From the Food and Drug Administration U. S. D. A., we hear of letters critical of this new beauty treatment for citrus fruit; "A few of these relate to discolorations of marmalade by the dyes but most of them are protests that the artificial color led them to expect a higher quality —

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Citrus Fruits, Marketing

PRORATE SHOULD CONTINUE

The Florida Citrus Control Commission displayed wisdom in recommending to Secretary of Agriculture Wallace a continuance of the grade and size prorate for grapefruit. The fact that 643 cars of grapefruit went to Northern markets during a single week this early in the season demonstrates clearly the need of strict supervision of shipments and careful inspection of all fruit leaving the state.

The market started off with prices averaging much more than last season, but if these prices are to be maintained care must be exercised to see that none but the very best fruit is shipped and that shipments are so restricted that there may be no glutting of markets before the trade is ready for heavy shipments of the new crop.

This season's grapefruit is of superior quality, thanks to the care of growers in carrying out the "Better Fruit" program of the Citrus Commission, and if proper care is taken to "nurse" the markets along during the early season, growers should realize much better returns from their groves than in any recent year.

The Citrus Commission is functioning ably, the citrus inspectors are doing their best to see that no immature or unfit fruit is shipped. If growers and shippers will co-operate fully with these agencies, profitable returns may be anticipated. Without such co-operation, a repitition of former season's disastrous slump in prices will follow.

Citrus Fruits, maturity testing

THE ONLY PROPER TEST (cl)

Florida has a citrus maturity law which is probably as near perfect as scientists and legislators can devise. The state is blessed with a corps of citrus inspectors who are versed in their job and conscientious in its execution. We have a citrus commission whose members are exerting every possible effort to protect consumers from unfit fruit and to protect growers in the prices received.

But after all is said and done, there is only one real test of the maturity of grapefruit and oranges — and that test lies in the palates of the consumers. Regardless of the ratio of acids to solids, if the fruit does not please the taste of the consumer that consumer will not come back for more. Rather, he will acquire a prejudice which will be hard to overcome.

The advertising campaign for Florida citrus fruits will begin on October first. If this advertising is not backed up by fruit that appeals to the taste of the consumer, the advertising will be largely wasted. It is useless to advertise the superiority of Florida citrus and then proceed to flood the markets with fruit which does not appeal to the palates of the consuming public.

A safe guide, and the only safe guide, for growers and shippers is to send no fruit to market which would not pass muster on the grower's own table. Adherence to this rule would put additional dollars in the pockets of every grower and shipper in the state.

ANOTHER CITRUS LEADER PASSES

Wilson, Lorenzo

In the recent death of Lorenzo Wilson of Jacksonville, Florida loses one of its most prominent and influential citizens.

A large grove owner in his own right, Mr. Wilson had long been connected with citrus developments and with manufacturing and commercial enterprises allied with the industry.

A leader in business and civic affairs, a promoter of public enterprises tending to further the best interests of his state, Mr. Wilson enjoyed the confidence, respect and esteem of business and civic leaders throughout the state. His passing robs the industry of an active and tireless leader, the state of an influential and honored citizen.

Few men have done more for Florida than Lorenzo Wilson; few there are whose passing will be more deeply and more generally mourned.

Citrus Fruits, marketing

WAITING FOR FLORIDA TO KILL THE MARKET

Charles Walker, prominent citrus grower, who has just returned from a visit to Texas, is quoted as saying that "Texas grapefruit growers are waiting for Florida to 'kill' the markets of the mid-west by the shipment of sour grapefruit, when Texas will step in and reap the profits."

If Florida growers are wise, they will not permit the hopes of Texas growers to materialize — but the shipment of even a small quantity of unfit fruit will certainly help the Texans to realize their hopes.

The "Better Fruit" campaign of the season just closed did much to improve the general quality of Florida citrus fruits. Let's make the "Better Fruit" campaign a permanent fixture in Florida groves.

Citrus Grove management

Some Seasonal Pointers To Florida Citrus Growers

By E. F. DeBUSK, CITRICULTURIST
FLORIDA AGRICULTURAL EXTENSION SERVICE

The many inquiries that come in at this season of the year by letter and otherwise indicate that timely suggestions on follow-up insect control, handling the cover crop and early fertilizing may be in order.

I wish to say in the first place that it is very encouraging to both citrus growers and consumers to note that the quality of the Florida citrus crop this year is the best of the last seven years. Favorable conditions in the early spring resulted in a uniform bloom and setting of fruit. Conditions at the critical time did not favor the development of melanose on the fruit. Consequently the crop is remarkably free of melanose blemishes. It has been kept free of rust mites, will be very juicy and of excellent eating quality **when ripe.**

Rust Mite Control

Up to the present time (September 14) citrus growers of Florida have done the most thorough job of rust mite control on the present crop that has been done on any crop in many years. Much credit is due the Florida Citrus Commission for sponsoring the Better Fruit Program. The Agricultural Extension Service has witnessed the most whole-hearted cooperation of growers, packers, commercial agencies and all concerned in an effort to make the 1936-37 crop of fruit the freest of rust mite injury of any crop since this pest has been recognized as a major factor in reducing the quality and commercial value of our fruit.

So far, so good. But the job is not completed. Still too many growers seem to act on the assumption that the rust mite disappears during the summer rainy season and can safely be forgotten thereafter.

We are all deeply concerned about keeping impressed upon the mind of growers the fact that this little enemy is on the job throughout the year; that the fruit is susceptible to rust mite attacks and injury from the time it has reached the size of about one-half inch in diameter until it has been clipped from the tree. Let's not allow the good work that has already been done to be undone, and all profits therefrom lost, by neglecting to keep up the control until the fruit is in the field crate.

Handling the Cover Crop

From a grove management standpoint our cover crops are considered in two general groups — legumes, such as crotalaria, beggarweed, cowpeas and velvet beans; and non-legumes — grasses, weeds, etc. They require different methods of handling for best results. Where crotalaria striata or beggarweed is growing as a cover crop in bearing groves the development of the pumpkin bug will determine largely the procedure in handling the crop. When a large number of the young bugs appear on the beggarweed or on the pods of the crotalaria it should be mowed, and thereby destroy the bugs. This mowing is often necessary in August or early September. In non-bearing groves these crops may be allowed to grow until they have reached maximum yield and mature a crop of seed, unless the the young grove is adjacent to a bearing grove. Where crotalaria spectabilis is grown this mowing procedure in pumpkin control is not necessary as very few bugs develop on this plant.

Maximum yield in organic matter of either of the crotalarias or the beggarweed is obtained by allowing the crop to grow to maturity before mowing it. If the crop becomes too heavy to mow, it may be reduced to a very desirable condition by cutting with a disc or roller cutter. The plants never grow too large or the crop too heavy for the latter implement.

On the lowlands of both the east and west coast, as well as on large areas of hammock and sand-hammock in the interior of the state, a great variety of grasses and weeds grow luxuriantly as cover crops. Where these crops are kept mowed as they reach the seeding stage new crops can come in return, being fertilized by the decaying mowed crop, so that the main problem, as the grower sees it, consists in keeping the grass and weeds mowed down. It is under these conditions that the best fruit of the state is produced, and the abundance of organic matter produced by these natural cover crops undoubtedly plays a very important part in this production.

A good many growers overlook the matter of supplying sufficient amount of available nitrogen to take care of the needs of the bacteria and fungi in decomposing the crop of grass mowed or worked into the soil in the fall. Cover crops that contain less than 1.7% ammonia are usually found to be deficient in nitrogen for the decomposing organisms. The general run of grasses contain about 1 per cent nitrogen while crotalaria and beggarweed contain about two per cent. As a matter of safety, it is considered good practice to apply, for each acre of the average cover crop of grass, about 100 pounds of nitrate of soda, 75 pounds of sulphate of ammonia, or 45 pounds of calurea. This should be applied at the time of the fall mowing or disking.

Early Fertilizing

As an aid in adequately fertilizing citrus trees a kind of picture as to what takes place both within the trees and in the soil throughout the year might well be considered. When an adequate supply of moisture and

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available nitrogen are present in the soil apparently citrus trees normally start building up their reserve supply of nitrogen early in the fall, which supply reaches its peak just before the spring flush of growth and bloom. This reserve supply is used up very rapidly as growth and fruit setting progresses, and is usually about exhausted by May. From May on, the tree needs as to nitrogen must be supplied directly from the soil. The great problem therefore is to supply nitrogen to the trees in available form and sufficient quantity to take care of their needs and if possible build up reserve supply.

In building up the reserve supply of nitrogen in the trees it seems desirable to begin a little earlier in the fall than is the usual practice, as early as September in some instances. The trees usually begin to go into dormancy during the early part of November. While we have much evidence that the trees take up nitrogen and other plant nutrients during the winter time, at the same time we have reason to believe that the nitrogen reserve can best be built up a little earlier in the fall while the tree is still "active." It has also been observed that where the trees are carrying heavy crops of fruit as is generally the case this year, more desirable results can be obtained by beginning the fall fertilizer earlier. It seems to be extremely difficult for a tree growing on our lighter soils to build up its nitrogen reserve supply while carrying a heavy crop of fruit, even under a very favorable fertilizing program. This probably explains why we usually have a light crop following a very heavy crop. That is, under such conditions the tree is unable to build up sufficient nitrogen reserve to come back with another heavy crop. Some progress has been made toward the solution of this problem by means of a more adequate supply of available nitrogen beginning earlier in the fall accompanied by an ample supply of soil moisture. In this connection it has been noted that a liberal supply of bulky organic matter applied during the rainy season aids materially in building up the reserve of the tree.

While Florida citrus trees are now carrying one of our largest crops they are in very favorable condition for a crop next year. But they must receive ample fertilization this fall to build up their reserve. With the favorable grove conditions that exist, and the prospects of a good year before us, growers feel encouraged. It is hoped that the efforts made this season toward more orderly marketing shall be for the good of the industry, so that the grower's courage may be sustained.

GROWERS PAYING FEDERAL LOANS IN ADVANCE

For every $1.00 falling due to the Federal Land Bank of Columbia, in August, the bank collected $6.57, according to Julian H. Scarborough, president, who said that farmers in the Carolinas, Georgia and Florida, taking advantage of the opportunity offered them by the prices received for their products, made substantial payments on their loans during the month.

In some instances, Mr. Scarborough said, the excess payments were made on past due installments while in some instances they were made in advance thus showing a desire on the part of the farmers to free their farms from debt as soon as is possible.

In North Carolina the amount falling due in August was $13,798.78 and the amount collected was $137,506.98.

In South Carolina the amount falling due in August was $13,027.64 and the amount collected was $96,155.08.

In Georgia the amount falling due in August was $50,637.89 and the amount collected was $373,477.01.

In Florida the amount falling due in August was $27,227.24 and the amount collected was $80,349,18.

In the four states, therefore, the amount falling due in August was $104,691.55 and the amount collected was $687,488.25.

AGRICULTURAL COLLEGE EDITORS TO HOLD 1937 CONVENTION IN FLORIDA

The American Association of Agricultural College Editors will hold its annual convention in Florida in 1937, it is announced by J. Francis Cooper, editor with the University of Florida College of Agriculture, Gainesville. He has recently returned from the annual gathering of the group at the University of Wisconsin in Madison and the association accepted his invitation to come to Florida.

Date for the convention will be set by the executive committee, but it is presumed that it will be some time next summer. The gathering will be at the University of Florida.

There Is Still Time For A Fall Clean-Up

Of Scale and White Fly which may be found on late varieties of citrus trees.

ORANGOL EMULSION is specifically designed to do this job — and do it effectively.

ORANGOL is cheaper today than ever before, yet the quality remains at the same high standard.

You will find **ORANGOL** Safe and Effective for this fall clean-up job.

ORANGE MANUFACTURING COMPANY
ORLANDO, FLORIDA

Citrus Fruits, Coloring

Practice Of Coloring Oranges To Be Continued

On the assurance of the State of Florida that it will withhold from the market at all times all oranges which are so unripe as to fall below the standard of 8 parts of sugar to 1 of acid, and which may be artificially colored so as to conceal inferiority, the United States Department of Agriculture has agreed to extend the date upon which it had intended to take action, from Sept. 1, 1936, to Sept. 1, 1937.

The Department on July, 16, 1934, and on November 23, 1935, had announced to the citrus industry that the Federal Food and Drugs Act required the addition of color to oranges to be plainly and conspicuously declared in all instances; that where the addition of color to oranges concealed inferiority, the fruit, even though satisfactorily labeled, would be deemed adulterated, and that after Sept. 1, this year, federal action would be taken whenever adulteration occurred. The notice follows:

Notice To Growers and Shippers of Citrus Fruits

Through notices to the citrus industry on July 16, 1934, and November 23, 1935, the requirements of the Federal Food and Drugs Act applicable to the artificial coloring of oranges were indicated. It was announced that the addition of color must be plainly and conspicuously declared in all instances, otherwise an offense under the misbranding section of the law would occur; and that where the addition of such color concealed inferiority the fruit, even though satisfactorily labeled, would be deemed to be adulterated. The latter notice not only warned packers and shippers against the immediate sale and delivery interstate of colored oranges which were misbranded through failure to declare on each orange the fact that color had been added, or which were adulterated by the concealment of inferiority where the fruit was so unripe as to fall below the standard of 8 parts of sugar to 1 of acid, but expressed the purpose of the Department to take appropriate action on and after September 1, 1936, where adulteration had occurred on other specified grounds.

Meanwhile the State of Florida has perfected its organization and made definite progress in the enforcement of a recent act of the legislature creating a Commission with power to promulgate regulations for the

Vital Elements in Every Bag

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Natural Chilean contains almost two score of major and minor elements such as boron, magnesium, manganese, iodine, calcium, potassium, etc. —each a vital element in growth and healthy development of plants.

QUICKLY available nitrogen in Natural Chilean Nitrate is important . . . but nitrogen is only part of the plant food and health value in every bag of this natural nitrogen fertilizer.

You've heard of Chilean's impurities. They are Vital Elements — manganese, iodine, boron, magnesium, calcium and many others. They are present in Chilean Nitrate because of its natural origin. Nature herself put them there, aged and blended them in her own wise balance and proportion. The deeper scientists go into the study of the minor elements, the more important these vital impurities are shown to be as factors in plant health and growth.

Ask for Champion Brand. It is Natural Chilean Nitrate in snow-white "bird-shot" form. Free flowing and bagged in even weight bags. Always in good condition. FREE — our interesting and valuable book, "Vital Impurities." Send for a copy.

Chilean Nitrate Educational Bureau, Inc.

Natural Chilean

NITRATE OF SODA

WITH VITAL ELEMENTS IN NATURE'S OWN BALANCE AND BLEND

Florida Citrus Exchange

control of citrus packing and marketing operations by the State Commissioner of Agriculture. Official assurances have been extended that for the coming season State control will provide for

First, more conspicuous declaration of the words "Color Added" than has occurred extensively in the past;

Second, a more exacting standard of maturity and quality of oranges than required by the Federal Food and Drugs Act;

Third, limiting the degree of coloring of early, mid-season, and late varieties to the average color which they normally attain in Florida at the time when they are harvested;

Fourth, restriction of shipments of colored oranges from the State of Florida to those which have been inspected and certified by the Florida Department of Agriculture as complying with the provisions of the Florida State law and regulations.

The observance of this program, which contemplates withholding from the market at all times any fruit which fails to meet the 8 to 1 ratio, will reduce materially if not entirely occasion for action under the Federal statute. On condition that these assurances are fullfilled as determined by active surveillance of appropriate Federal agencies, the effective date of the notice of November 23, 1935, is extended to September 1, 1937.

Sincerely,
(Signed) H. A. WALLACE,
Secretary.

Excessive use of bordeaux mixture could cause an increase of red scale, as the mixture will destroy various fungi that live upon and kill these insects. In controlling this scale on shrubbery, the same method, oil emulsion, is used as for citrus, except that a somewhat weaker spray is best for shrubbery with tender growth.

A wire basket makes a good refrigerator container for eggs.

'Aero' Cyanamid
NITROGEN + LIME FERTILIZER
FEEDS THE CROP
SWEETENS THE SOIL

Exchange Head Looks For Good Season

"In spite of bumper crops of citrus fruits in California and Texas, prospects for the citrus grower in Florida are fairly good," according to C. C. Commander, General Manager of the Florida Citrus Exchange in an address delivered before the Board of Directors at their annual September meeting in Tampa on Friday, the 18th.

"Wars in Spain and Palestine will cut down fruit supplies from those sections in the European markets while reciprocal trade agreements with reduced tariff provisions on grapefruit particularly will enable Florida to increase export shipments to the continent," said Commander. "At the same time the state legislative program here in Florida is doing much to stabilize the industry and the federal marketing agreement should go a long way toward regulation of shipping supplies thus stabilizing the markets. In addition to the above circumstances we have in Florida this season a crop of the finest citrus fruit that was ever produced in the state while throughout the northern states there is a shortage of apples and of all other fruits and vegetables. Economic conditions also are apparently improved and the buying power of the public is greater. So while we have bumper crops out of Texas and California to compete with, at the same time prospects are fairly good for the Florida grower this season."

E. E. Patterson, Sales Manager, reported an estimated navel crop from California of 38,000 cars which will begin to roll to market in November. "That is 10,000 cars more than the crop of last season," said Patterson. "Texas reports 16,000 cars on the trees with a probable commercil shipment of 10,000 cars of citrus."

Exchange directors set the annual selling retain at 10 cents per box, 5 cents per box on house or association sales and no charge on house sales of fruit below second grade and to canneries. All sales, it was understood, must have the approval of the Sales Manager.

Harold Crews, Assistant General Manager, reported that shipments showed little or no decay at the present time and that a fight was being made throughout all Exchange houses against blue mold, stem end rot, and other causes for decay which would make discounts and cut down grower's returns.

W. C. VanClief, First Vice President, presided at the meeting as Acting President and an appropriate memorial to the memory of the last President, John S. Taylor, was unanimously voted.

UNIVERSITY COLLEGE OF AGRICULTURE OPENS FIFTY - THIRD YEAR

With the most comprehensive curriculum in the history of the institution, the University of Florida College of Agriculture in Gainesville, began its 53rd scholastic year on Monday, September 14.

Classes began on September 21, but the 1936-37 scholastic year opened on September 14 for placement tests, Freshmen Week, and registration. Students in the upper division registered on Saturday, September 19.

Courses in all major phases of agriculture will be offered during the year. New courses in dairy manufactures, taught by Dr. L. M. Thurston, who recently came to the college from the University of West Virginia, have been added to the curriculum. A wider range of courses will also be taught in the forestry department. This department will also have the use of University Forest, a gift from the State Board of Forestry, for practical training and instruction purposes.

Besides their classroom study, students will be afforded practical training on the institution's 145-acre farm, the Experiment Station farm, and in the laboratories and barns of the college and station.

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CONSULTING HORTICULTURIST
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Economical, Safe, Effective
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WINTER HAVEN, FLORIDA

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IRON WORKS
TALLAHASSEE, FLORIDA
CHROMIUM GRATE BARS
and all types of furnace castings
GEARS, SPROCKETS, PINIONS
all types machinery castings
BRASS, BRONZE AND
ALUMINUM CASTINGS

SOME NEW ASPECTS OF GUMMOSIS AND PSOROSIS OF CITRUS TREES IN FLORIDA

(Continued from page 7)

lemon trees, which occasionally assumes serious proportions in certain plantings. These organisms invade the wood of these trees rapidly and the dying of the attacked parts is accompanied by more or less profuse gum formation. He was able to reproduce this trouble readily by inoculations with pure cultures of each of these fungi. It is of interest to note in this connection that, in grapefruit trees, serious cases of gummosis rarely occur in young trees.

In those cases where gummosis is initiated by purely physiological causes the gum exudes through cracks formed in the bark as a result of the internal pressure exerted when it accumulates in sufficient quantity between the wood and bark to rupture the latter. In such cases the gum flow ceases when the conditions stimulating its formation no longer prevail and the cracks frequently heal without infection taking place. Even when areas of bark are killed at points where the gum accumulates in pockets beneath it, infection of the underlying wood frequently does not take place and the wounds thus caused soon heal. Sections through such citrus trees show merely a very limited discoloration immediately back of the areas where the bark was killed, together with the usual lines of gum canals invariably present when gumming of the tissues from any cause is involved. Instances have been observed where grapefruit trees have developed severe outbreaks of gumming involving the trunks, main limbs, and even the small branches, and the trees recovered without any special measures other than the correction of the condition that apparently induced this severe outbreak. Gumming of this type is alarming only in that it is indicative of a disturbance in the normal physiology of the tree and that the ruptures formed in the bark or local areas where the bark has been killed pave the way for the entrance of destructive organisms When infection of these gumming cracks by Phomopsis and Diplodia take place, the bark immediately adjacent to these cracks soon develops a dark discoloration which is not evident until the dark outer surface is scraped or cut away. When infection of the bark by these fungi takes place new gumming starts and it is frequently only a matter of a short time until these organisms have invaded the underlying wood. In fact, such organisms as Phomopsis and Diplodia frequently develop faster in the wood than they do in the bark. The majority of the gummosis of grapefruit trees in Florida appears to develop in this manner.

In the case of psorosis on orange trees the wood usually remains free from discoloration, other than that caused by the gum canal formation, for a considerable length of time even after the disease has encircled the attacked trunks or limbs. Upon this disease becoming sufficiently severe to cause the killing of the bark in one or more areas, invasion and discoloration of the wood by such organisms as Phomopsis and Diplodia appears to have its inception. When the stage is reached at which the interior wood becomes discolored following invasion by these organisms, trees attacked by psorosis are doomed to a gradual decline. While the invasion of the wood by these organisms appears to be purely secondary in the case of psorosis, the havoc wrought by them appears to greatly exceed that occasioned by the disease in its initial form. In Florida, psorosis is particularly destructive to Valencia oranges, especially in the ridge section.

Observations made over a period of several years have shown quite conclusively that there is a direct relation between the occurrence of drought and the susceptibility of at least grapefruit trees to develop gummosis, and that the progress of the disease in grapefruit trees and their decline is most rapid in groves or situations that are subject to drought. These observations are supported by the experience of citrus growers who have been close observers of their grove conditions. The dieback of twigs and branches caused by attacks of Diplodia, which may or may not be accompanied by more or less gumming, was pointed out by Earle and Rogers* in 1915 to be a serious citrus trouble in Cuba and the Isle of Pines, especially on trees on unfavorable soils, and at the beginning of the dry season. Once the wood of citrus trees becomes invaded by Phomopsis citri or Diplodia natalensis, the weakening of the trees by prolonged periods of drought apparently furnishes conditions quite favorable to the rapid development of such wood-invading organisms

(Continued on page 19)

*Earle, F. S., and Rogers, John M. San Pedro, Isle of Pines, Citrus Pathological Laboratory. First Annual Report. 41 pp., 19 figs. 1915.

FLORIDA DOLOMITE

(A natural Carbonate of Magnesium and Calcium)

Improve the production of your fruit and vegetables by improving the condition of your soil with FLORIDA DOLOMITE —

It neutralizes soil acidity.

It supplies Magnesium and Calcium.

It increases the efficiency of your Fertilizer.

Ask for FLORIDA DOLOMITE

Florida Dolomite Company

Pembroke, Florida

DEVELOPING HOME MARKET FOR FLORIDA CITRUS FRUITS

(Continued from page 9)

than was actually the case .....".

Housewives are interested in the use of the whole fruit many times, not merely the juice or pulp content, hence, the complications that arise when the peel of the fruit is more or less manipulated.

As from this letter "Recently when I set down with a bowl of unbelievably bright oranges and a paring knife to start another batch of marmalade, I noticed the words 'Color Added" stamped on each orange. Since each garish orange bore the same announcement, I put away my paring knife and other paraphernalia and gave up the idea of new marmalade until I would have had time to think it over. We are still scraping along without a fresh supply of marmalade and I am still wondering what this brilliant and lavishly supplied wash is and why the temptingly russet-flecked oranges of Florida should be afflicted with it and become replicas of the artificial ones decorating the synthetic orange drink places. No one seems to know just what it is and while everyone agrees that it cannot be poisonous, still I would not like so much of it in my pet kind of amber marmalade. But — I'll probably become reconciled to making it with more grapefruit and lemons and forgetting the orange part of it." This is the reaction of many other housewives on the so-called beauty treatment for Florida Citrus fruits.

Our first step in the development of any market is to make sure that the product we offer is of good quality. If the product is good, our educational and advertising campaigns will be easy. If the product is inferior, we can advertise and preach and demonstrate as much as we please — Florida housewives and other housewives will refuse to buy. And they do.

Shipping out by truck or train, inferior fruit — immature, over ripe, or otherwise defective, may bring a few immediate dollars to those who sell the stuff, but it destroys the market for the future. Only when we have assured ourselves that we have a quality product to offer the Florida market, then should we inaugurate an educational campaign to sell Florida folk on the idea that citrus fruits should form an integral part of the Florida family menu, that they are not simply luxuries to be enjoyed by the few, and that they are not "trash", as one Florida father called them.

Florida hotels and restaurants should serve fresh citrus fruit juices with every meal, free or at a very nominal cost. These juices should be fresh and from the best quality fruits. Thus, those who taste them would develop a special fondness for them, and would learn to demand that quality elsewhere.

Fresh Florida fruit juices should be served in every school cafeteria in the state, thus children would begin to think of these juices as food, and to expect them as a part of their daily menu at home, as well as at school.

Fresh orange and grapefruit juice should be available at every fountain, at every wayside cold drink stand in the state. The juice that is offered, however, should be freshly extracted from fresh, tree-ripened fruit. Nothing can injure the market any more, than allowing venders to offer the consuming public a stale, flat tasting, or fermented juice.

Orange juice is one drink that the public does not want out of a bottle or a pitcher. Orange juice that has stood only a half hour has lost flavor — has by oxidation lost some of its healthful properties. Dr. Kellogg told you years ago — "Orange juice is a divine nectar concocted by the sunshine which carries healing magic in every drop." Dr. Kellogg meant freshly extracted orange juice, from fresh, tree-ripened fruit — not stale juice, from stale fruit.

Coffee companies have worked out pretty effective advertising methods. Housewives who go into grocery stores on Saturday encounter attractive young women dispensing cups of fragrant coffee. Along with the cup of coffee, the housewife hears a good hint or two about the good brand, and the chances are she buys a pound or two before leaving the store. A small cup of fruit juice, chilled or otherwise and served with a smile and a word about its value as a "pick-up" would help to popularize our fine fruit and to develop a taste for it.

I am not here to give you the bromide — advertising pays — but I want to say that I think we have overlooked the possibilities of our home markets in our advertising. We have spent a good bit advertising Florida fruits outside the state. If we offer our Florida friends a good product, do some intensive advertising among them, their influence will reach to the ends of the earth.

Good advertising, like charity, begins at home. Sell the home markets and the outside markets will grow naturally.

We can educate the people of the state, including those who winter with us, to the value of citrus fruit in the dietary, when the fruit is right, by holding citrus utilization schools, holding demonstrations at every available time and place, by distributing menus and recipes, through the cooperation of the school cafeterias, the hotel dining rooms, the restaurants, drug stores and roadside stands.

We have 1,250,000 potential consumers on our very door steps, as it were. Let us develop in these a taste for Florida fruits, get the idea across that citrus fruit is a delightful, valuable item in the diet — that it not only gives variety but that it contains many of the very vital and necessary food elements — sell them on the idea that it is cheaper than some of the things they now think of as essentials and offer good fruit as a price that people can pay.

As you know Home Demonstration Work is interested in spreading among Florida people an understanding of the advantages of a liberal use of their own home grown fruits and vegetables.

We want our work to reflect those things that are most beneficial and helpful, we would be glad, Mr. Presi-

RUST-TOX

is a scientific blend of processed fish oil and China wood (Tung) oil — completely deodorized and dehydrated. It penetrates every pore of rusted metal, extracts the moisture from the rust — virtually takes it into suspension. In spite of this penetration Rust-Tox has at least twice the coverage of conventional paint. It is heat, acid and alkaline resisting.

Rust-Tox practically eliminates this cost of rust removal before painting. It is ideal as a prime coat, excellent as a finish coat, but not recommended for submerged work except as a primer. Furnished in colors.

Rust-Tox is widely used on buildings, tanks, stacks, bridges and machinery. That rusty roof can be saved indefinitely with Rust-Tox and at a cost of about 1-3 cent per sq. ft.

Sales Representative

GEO. L. SIMONDS CO.

Winter Haven, Fla.

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PLIBRICO Jointless Firebrick; WYOLITE Mica Insulation Nitrose, Permite Aluminum Paint and Flexrock floor repair and resurfacing materials.

dent, to have the Society's suggestions as to how we may better serve the horticultural interests of the state, in particular, this great citrus industry, that holds so much for the prosperity of the state.

In conclusion, may I say that never was the importance of the use of citrus fruits so marked as now. But before we supply the New York and other markets with our fruit, let us remember that the best is none too good for the people within our state and first supply the home markets with the juciest, sweetest and best flavored fruit that Florida can so well produce.

Then, members of the Horticultural Society, you'll soon be making so much money that you'll think every day is Christmas and oranges will make you too think of Santa Claus.

Our distinguished president here, I happen to know, is personally sold on the value of citrus fruits — he does not believe — as unfortunately so many of our neighbors do — that they are only good for our Yankee friends and urge that they be the ones to use them and buy them by the box. President Taylor in his home utilizes them to the fullest, not only in their luscious, fresh state, but in their many delectable made dishes and as by-products.

Many there are of us who live in citrus groves yet know not of the deliciousness of its fruits.

NITRATE AGENCIES COMPLETE WORK ON THEIR NEW PLANT

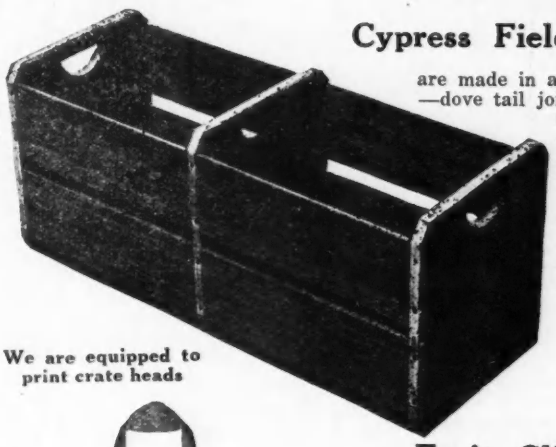
Nitrate Agencies Company of Jacksonville have just completed work on their new plant located at Commander's Point not far from their former location.

Representatives of the company state that they have increased their capacity by fifty percent and that the newest and most modern equipment has been installed in their new place.

The plant is most advantageously situated on the water where incoming corgoes of materials may be easily unloaded and where shipments to their export trade may be mandled with the least inconvenience. They are likewise suitably located for adequate railway facilities and their loading platform for truck deliveries is said to be one of the most modern in the state.

The company looks forward to a satisfactory season and state that with their improved facilities they will be able to care for business more expeditiously than ever before.

We Offer Florida's Greatest Values In Florida Citrus Field Equipment....



We are equipped to print crate heads

Cypress Field Crates

are made in all types—solid head —dove tail joint heads and other type heads. Our crates are all made from the famous Gulf red cypress. We are the largest distributors of field crates in the state. This guarantees the high character of our field crates.

NON-BRUISE

Picking Bags

SUPERIOR DURABILITY

Our bags carry the exclusive feature of the ribber-covered rim which eliminates the possibility of rust eating through the canvas. This also protects the fruit while the flexible inside belt makes these bags most comfortable.

Fruit Clippers

ROUND (BULL) NOSE TYPE

Our clippers do not pinch the fruit—no clipper cuts — the shape of the clippers permit clipping in close clusters of fruit. All other types fruit clippers in stock.

WE CARRY IN STOCK

Belting (Cotton Conveyor)
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Fruit Clippers (Harvey-Wiss-Clauss)
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Picking Bags (Rigid Rim Type)
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SASH, DOOR and LUMBER CO.

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Warehouse stocks also carried at Frostproof—Avon Park—Sebring—Bartow and Haines City

Citrus Fruits, Diseases & Pests

Fall Clean-up Measures Against Scale Insects And Whitefly

BY J. R. WATSON
ENTOMOLOGIST, FLORIDA EXPERIMENT STATION

In most of the citrus belt we are having the heaviest brood of whiteflies in many years and it will be necessary to take rather unusual pains to control them this fall. The adults are now on the wing and as soon as they disappear and the eggs have hatched will be the proper time to give the fall clean up spray of an oil emulsion. For several years the growers have paid little attention to whiteflies. The clean up measures for the scale insects have been sufficient to control the whitefly as well, in other words the control of whitefly has been a mere incident of the control of scale insects. However, this year it looks as if the whiteflies are going to demand considerable attention on their own account and in groves where spraying for scale insects would not be necessary spraying for whiteflies will be.

The spray, of course, is an oil emulsion and just when it should be applied will depend much upon the varieties of fruit being grown and the species of whitefly chiefly involved. There are two common species of whitefly and two others, the woolly whitefly and the bay whitefly. The woolly whitefly has not for many years needed any attention. We have seen one heavy infestation of the bay whitefly but ordinarily this does not need any attention. The two common species are what we have always called the "common whitefly" and the cloudy winged whitefly. However, in the last two years the cloudy winged whitefly is in many parts of the citrus belt more abundant than citri, so the name of "common whitefly" as applied to Dieleurodes citri is no longer very apt. In some localities indeed the cloudy winged whitefly is the only one present. The control measures are of course the same for which ever species you have; namely, and oil emulsion containing one per cent of actual oil. From the standpoint of control the chief difference between the two species is the time of the emergence of the adults. Citri has largely completed its flight in the main citrus belt of Florida, whereas the cloudy winged whitefly is still on the wing and probably will be for several weeks. The life history of the two is much the same. When the adults now on the wing have laid their eggs they will die, from the eggs will hatch out the crawlers which will crawl around over the leaves for a few hours, then settle down for life, or until they have completed their development and are ready to hatch out into adults next March or April. The cloudy winged whitefly gets its name from a rather dim, dark area in the middle of the wings, but the easiest way to tell them apart is by their eggs. The eggs of the cloudy winged whitefly when a few days old turn black or dark brown in color and as seen under a hand lens the membrane surrounding the eggs is raised in certain areas so as to form a net-like appearance. The presence of the yellowi aschersonia on the leaves also is a sign that the cloudy winged whitefly is present as this yellow aschersonia does not grow on citri.

Now as to the best time to spray for whiteflies, it is just as soon as the eggs have hatched, and as stated above this will depend a good deal on the species. Watch the flight of the adult whiteflies and when they have largely disappeared from the wing mark down the date on your calendar, then allow ten days for them to hatch. Whitefly eggs usually hatch in a week but to make sure that most of them have hatched wait ten days after the above date, then spray. It is important to spray early in the life history of the whiteflies for the reason that one wants to prevent the drain on the trees resulting from their sucking the sap. The second reason is that they are more easily killed when they are young. The third reason arises from the fact that a recently sprayed tree is more susceptible to cold injury, therefore the spraying should be done at least a month before one need expect any severe cold. The earliest freeze we have ever recorded was two years ago on the 12th of December, so from the standpoint of cold hazard the spraying should be done by the middle of November, on the other hand spray should not ordinarily be risked when the temperature is above 90 degrees F. in the shade. At any time from now on one usually can find at least part of the day when the temperature is suitable

PATENTS

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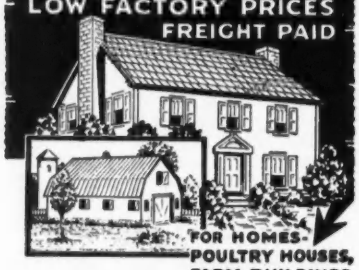

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for spraying, so that the time to spray will be determined largely by which species of whitefly is in the grove. In the case of citri the spraying can be done at any time now, where the cloudy winged whitefly is present in the grove it may be a month before the best time for spraying occurs.

This fall clean up of the whiteflies is especilly desirable. If not killed they will continue to suck the sap from the leaves all winter long, at the same time giving off honey dew in which sooty mold will develop, blacking leaves and fruit. There will be no other serious flight of adults before March and April next year, though sometimes a partial brood comes out in January it is of little consequence so the trees cleaned up at the present time will remain cleaned up all winter.

Incidental to the control of whiteflies will also be the control of scale insects on the trees.

There is one exception to the statement that this fall clean up of citrus is desirable, that is with early varieties of citrus which one wishes to market before Thanksgiving. A spray of oil emulsion has a tendency to retard ripening of these early varieties, so that in the case of Parson Browns, Hamlins, early grapefruit and especially satsumas spray should be postponed until after the fruit is picked or a few days before.

Just why we have such a heavy brood of whiteflies it would be hard to say, although undoubtedly the weather and the very general spraying with Bordeaux have played their part. In much of the citrus belt the characteristic rains of a normal summer have been irregular this year, so that conditions have not been favorable for the development of entomogenous fungi, the aschersonia and the brown fungus which usually go far toward controlling whitefly at this time of year. Furthermore, the quite general spraying of Bordeaux has undoubtedly interfered with the development of these fungi. It is now too late to expect much help from the fungi this year and those growers who have a heavy infestation of whitefly in their grove will have to depend on spraying.

FOR SALE

Lists of Florida Citrus Growers compiled from recent survey of groves, arranged by counties. Names, address, acreage and legal description.

Also List wealthy residents of Florida

National Survey Co.
P. O. Box 163
ATLANTA, GA.

SOME NEW ASPECTS OF GUMMOSIS AND PSOROSIS OF CITRUS TREES IN FLORIDA

(Continued from page 15)

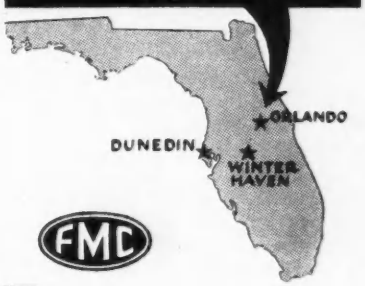
within the trunks and limbs attacked by gummosis or psorosis. The ability of these two fungi to extensively invade and kill actively growing tissues which have considerable powers of resistance indicates that they are to be regarded as strong facultative parasites. It is, of course, highly desirable that extensive inoculations with pure cultures of these fungi be made in bearing citrus trees in order to determine the exact role they play in the production of gummosis.

Since the extensive invasion of citrus trunks and limbs by phomopsis and Diplodia cannot be detected without cutting into the part involved, the importance of gummosis and psorosis is generally underestimated by growers. As a result, they rarely attempt to control these diseases until they have developed to the point where they encircle the attacked trunk or limb. As has been shown, it is then often entirely too late to combat these diseases by external treatment, as they may have become systemic by this time.

Unless attempted in the early stages, it is believed that the control of such diseases as gummosis and psorosis must be accomplished by preventive measures before they occur, rather than of remedial measures after they have been allowed to develop for a considerable length of time. It is believed that it is well worth while for a grower to devote the time and troubles necessary to make a periodic inspection of his trees for the development of bark diseases, so that outbreaks of them may be discovered early and timely treatment administered. Not infrequently the mere removal of a branch on which gummosis or psorosis has developed will prevent the organism likely to be already established in the wood from spreading downward into a larger limb or even the trunk. The admonition of the old motto: "A stitch in time saves nine," is truly applicable to the control of our citrus bark diseases. Growers are too frequently inclined to minimize the importance of these diseases until they threaten the life of the tree and it is much too late to effect their control. That is

(Continued on inside back cover)

FAST SERVICE for FMC Parts and Packing House Supplies



THERE'S no costly delay when you need FMC parts, replacements or supplies . . . because we carry in stock parts for every machine we have ever built!

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These FMC service warehouses and parts supply depots are located at:

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Get in touch with the nearest FMC service headquarters for information about any type of packing house equipment. We make a complete line right here in Florida, and our new service facilities bring us closer than ever to your house.

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Florida Division
DUNEDIN, FLORIDA
Phone DUNEDIN 2556

Insect Pests Of Cover Crops

BY J. R. WATSON

ENTOMOLOGIST, FLORIDA EXPERIMENT STATION

Due in part perhaps to the Soil Conservation Program of the Federal Government, farmers are showing more interest in cover crops than for several years. Citrus growers have long appreciated their value.

The control of insects of cover crops is influenced greatly by the fact that because of the low value per acre of cover crops not a great deal of money per acre can be used for insect control.

Taking up the different cover crops and briefly reviewing the insects most common on them: in the first place we have the crotalarias. The growing plants, leaves and stems, are not generally seriously troubled with insects, but the production of seed is frequently very much interfered with. There are two insects largely responsible for this. The most important, on the whole, is the larvae of the bella moth. This is a yellowish, hairy caterpillar which mines the pods of the crotalarias, eating the seeds. It goes into the pod through a round hole which it makes, and will often destroy all the seeds in the pod. The adult of this insect is a very pretty moth. It has front wings of white with dark markings, and the under wings are a very pretty pink. It is a strikingly colored moth, which gives it its name of bella moth, "pretty moth." Unlike the majority of moths, it flies around in the day time and can be seen abundantly in any patch of crotalaria. Before the pods appear it feeds on the leaves of the crotalaria, but its depredations here are seldom serious, as the crotalaria grows rapidly.

In the ridge sections of the southern end of the State where the lupine grows rather abundantly, the lupine pod borer is a serious pest of the crotalaria seed. It mines the pods as does the bella moth, but it is a different colored insect. It is a dark, dirty brown color, and is nearly naked. That is to say, in contradistinction to the bella moth, it has very few hairs.

There is very little that the grower can do about either of these pests. In the case of very valuable plantings of crotalaria from which he wishes to get the maximum amount of seed, spraying with lead arsenate would doubtless be a good control measure. The spray would be applied about the time the plants are in bloom so as to protect the young pods. This, of course, would not pay at all in the case of most crotalarias, but it might be applied to especially valuable plants. The destruction of wild lupine around the crotalaria fields would diminish the infestation of the lupine pod borer. It is on lupine that this insect lives during the early part of the season.

Cowpeas also have their seeds seriously injured by several pests. One of these is the cowpea pod weevil, a black weevil which punctures the seeds through the pod for the purpose both of feeding on the young peas and of laying eggs in them. From these eggs a grub develops which destroys the young peas in the pod. Another insect which also does much damage to the pods of cowpeas are the "stink bugs," particularly the southern green stink bug, commonly called "pumpkin bug" by our growers. This does not lay eggs in the pod as does the cowpea pod weevil, but sucks the sap out of the pods and young peas.

We know of no insecticide which is effective against either of these insects which will not burn cowpea foilage. Probably the best plan is to go through the patch in the early morning when the insects are sluggish and knock them off into a pan containing a little kerosene or oil. Waste crank shaft oil will answer the purpose. This, of course, would not be practical on a large acreage, but in a small garden patch it will enable the owner to get some cowpeas.

The fondness of the different stink bugs for cowpeas makes this crop rather unsafe for a bearing citrus grove or pecan orchard, although it is a most excellent crop for young groves of either. Beggarweed also has a tendency to be a very favorable host plant for these pumpkin bugs. Seeds of the beggarweed are much eaten by the corn earworm.

The chief pest of velvet beans is the velvet bean caterpillar which nearly always strips, or at least badly rags, velvet beans during the latter part of August and September. Probably the best control measures for this caterpillar is dusting with one of the flousilicates. Since this caterpillar usually disappears in the latter part of the fall there will usually be no need of putting on this dust after the pods begin to form. Therefore there would be no danger of poisoning stock unless, as is seldom done, the velvet beans should be cut for hay.

Many different kinds of grasses are common and valuable cover crops, for groves and field crops. These are much subject to insect attacks during the summer time. Three different groups of army worms are particularly abundant; the semi-tropical army worm, the Repanda and the so-called "fall armyworm," which, however, is a mid-summer or late spring army worm in Florida. The semi-tropical army worms are large, thick caterpillars with a velvety appearance, usually with a prominent dark swollen spot just behind the head. They start early in the season and are more abundant in the southern part of the State. The Repanda is the caterpillar which has so thoroughly stripped the grass in the citrus groves during the last few summers. The

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Electricity on farms

fall army worm is a slender, greenish worm with a white stripe down the back which forks just behind the head to make a prominent Y. These different army worms are rather easily controlled by a poisoned bran bait. Mix a pound of paris green with 250 pounds of bran and moisten with about 2½ gallons of water to make this bait.

Other worms which are particularly abundant in grass lands are cutworms. White grubs, the larvae of June bugs or May beetles, are especially abundant in grass lands.

Grassy land intended to be planted next winter or spring in truck crops, corn, or cotton, because of the presence of these numerous pests, should be plowed as early in the winter, or even late fall, as practicable, so as to eliminate these and many other insects which are common in grass lands and often do much damage to truck crops, corn, etc.

Grasshoppers are pests which are libale to attack any of these cover crops mentioned, but they are probably less injurious to crotalarias than any of the others. However, they can be controlled without any great expense by the poisoned bran bait mentioned above for army worms, to which has been added a quart of syrup, a small handful of salt, and several citrus fruits grated or chopped finely.

One word to citrus growers in regard to stink bugs. Do not, any more than you can help, plant too large a variety of cover crops in the same grove. For instance, do not plant cowpeas and beggarweed in the same grove, as the cowpeas are apt to start an infestation of stink bugs which will be carried on by the beggarweed in the latter part of the summer, up until the time when citrus fruit is attractive in the fall.

ELECTRIFICATION ADVANTAGES OFFERED TO FLORIDA FARMERS

Although Florida is 30th among the states of the nation in number of farms, it ranks 35th in the number served by central station electricity, says A. P. Spencer, vice-director of the State Agricultural Extension Service, Gainesville.

Mr. Spencer points out that Florida ranks 28th among the states in percentage of farms served by central station electricity. Only 5,686 of the 72,857 farms in the state, or 7.8 percent, were receiving the advantages of central station electricity at the end of 1935.

He added that this low percentage of electrified farms means fewer radio sets and fewer water systems and less electrical equipment of all kinds which could lighten the drudgery of farm work. Quoting 1930 figures, Mr. Spencer points out that while 41.0 percent of Florida farmers owned automobiles, only 6.0 percent had radio sets, 12.8 percent had running water, and only 6.0 percent had telephone service.

The Rural Electrification Act provides that $50,000,000 shall be available during the current fiscal year as loans for the construction of rural lines and house wiring. One half of this amount must be allotted to the various states in proportion to the percentage of unelectrified farms, while the remaining $25,000,000 may be allotted at the discretion of the Administrator in the States where it will prove the most effective, providing that not more than 10 percent, or $2,500,000, may go to any one state. This means that between $250,000 and $2,750,000 will be available to Florida farmers, depending on the initiative they show in the electrification program.

Interested farmers are urged to see their county agent or write to the Rural Electrification Administration in Washington for information.

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The Results at Harvest Time Do Not.

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WE SPECIALIZE IN GROVE SERVICE

AG ENROLLMENT GAINS

Upper class enrollment in the University of Florida College of Agriculture, Gainesville, this year is nearly double that of last year, it is announced by Major W. L. Floyd, assistant dean. There are 42 seniors and 86 juniors, compared with 28 and 41 for the preceding year. Total enrollment in the agricultural college is 155 this year.

IN THE UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF FLORIDA IN BANKRUPTCY.

IN THE MATTER OF L. M. GODWIN, INC., BANKRUPT.

To the creditors of the above named Bankrupt and all other persons interested or concerned:

NOTICE is hereby given that the property belonging to the Estate of the above named Bankrupt will be sold on the 9th day of October, A. D., 1936, at 12 o'clock noon, at the office of Nathan R. Graham, Referee in Bankruptcy, 1204 Twelfth Floor, Citizens Bank Building, Tampa, Florida.

A general description of the property to be sold is as follows:—

One certain citrus packing house, together with all machinery and equipment therein situated and specifically described in that certain Chattel Mortgage as same appears of record in Chattel Mortgage Book 463, at Page 113, Public Records of Polk County, Florida, reference to which is herein referred to for a full description of said property, located at Alturas, Polk County, Florida, between the packing house of W. H. Gadeau and Clara Street and situated on the right-of-way of the Seaboard Air Line Railroad.

Said property may be inspected on any business day prior to the sale by appointment with F. Loy Conner, Trustee, Bartow, Florida; the Trustee reserves the right to withdraw any of the said property from sale unless it shall bring at least seventy-five percent. of the appraised value. All property to be sold free of liens.

Dated this 24th day of September, A. D., 1936.

F. LOY CONNER.
Trustee in Bankruptcy.

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The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

WILL PAY CASH for Rough Lemon fruit for this winter delivery. Will contract ahead for any quantity you may be able to furnish, kindly state amount you will have available. Box 120, The Citrus Industry, Bartow, Fla.

2 YR. FIELD GROWN ROSE BUSHES: Red, Pink, Shell, Salmon, White Radiance, Hollande, Columbia, Briarcliff, Sunburst, Pres. Hoover, Victoria, Talisman, Sensation. All 19c each, postpaid. Ship C.O.D. NAUGHTON FARMS, Waxahachie, Texas.

CAUSERIENCE LEPIDOFLOIA—(So-called Brazilian oak), resembles Australian pine. Grand for wind-breaks. Cold resistant. Beautiful. Send for sample of foliage. $6.00 per 100. S. S. Matthews, Homestead, Fla.

ALYCE CLOVER, the best legume for hay or covercrop. Write for information. Hardin Groves, Box 63, Lakeland, Fla.

FOR SALE—80 acres good citrus land, two miles northwest of Cocoa, Brevard County, Florida. Price $1600.00 cash. S. Hendry, City Point, Florida.

Fine Hamlin Buds ready fall delivery. Place orders now. Zellwood Nurseries, Zellwood, Fla.

FILMS DEVELOPED 2 prints of each 25c; 20 reprints 25c. Pine Photo, Y-5134 Nevada, Chicago.

THRIFTY TREES and budwood from record performance Perrine Lemon parents. Persian Lime and other citrus varieties. DeSoto Nurseries, DeSoto City, Fla.

CROTALARIA—New crop, high quality, double cleaned, scarified Crotalaria Striata seed for sale. Attractive prices. Carolinas' Crotalaria Co., Camden, S. C.

UP to $20.00 paid for Indian Head Cents: Half Cents $125.00; Large Copper Cents $500.00, etc. Send dime for list. Romanocoinshop, D. Springfield, Mass.

LARGE CITRUS trees for replanting at special low price. Grafted avocado trees and budwood of Perrine lemon and Tahiti limes. WARD'S NURSERY, Avon Park, Fla.

FOR SALE—Small packing house machinery and equipment complete. Apply Hector Supply Company, Miami.

MEN WANTED—Sell shirts. No experience necessary. Free samples. Commission in advance. Free ties with shirts. Carroll Mills, 875A Flatbush Av., Brooklyn, N. Y.

WANTED—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

HARDIN'S SPERRYOLA Lemon, a profitable adapted commercial variety for all sections. Hardy, prolific grower and producer. Limited number choice trees. Hardin Nurseries, Box 63, Lakeland, Fla.

WANTED—Man with from ten thousand to twenty thousand dollars to grow an entirely new orange for the U. S. markets. Cheap lands, no cold, plenty water, no fertilizer. A world beater in an orange. Patented.—Address, Buen Negocio, Gaveta-1, Holguin, Cuba.

PERSONAL—Quit Tobacco easily, inexpensively, without drugs. Send address. N. A. Stokes, Mohawk, Florida.

CITRUS NURSERY TREES, standard and new varieties on Cleopatra and Sour. Priced from 30c up. Grand Island Nurseries, Eustis, Fla.

FREE Booklet describes 87 plans for making $20-$100 weekly, home or office, busi-your own. Elite Service, 505 Fifth ave., New York City.

WANTED—To hear from owner having good farm for sale. Cash price, particulars. John Black, Chippewa Falls, Wisconsin.

PUREBRED PULLETS FOR SALE—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

LAREDO SOY BEANS, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

FOR SALE—Selected budwood and trees of Perrine lemon, Tahiti lime, new varieties tangelos and other citrus. Ward's Nursery, Avon Park, Fla.

SCENIC HIGHWAY NURSERIES has a large stock of early and late grapefruit and oranges. One, two and three year buds. This nursery has been operated since 1883 by G. H. Gibbons, Waverly, Fla.

NEW COMMERCIAL lemon for Florida, the Perrine; proven. All residents need yard trees, keeping Florida money at home. Booking orders for budded stock for Winter delivery. DeSoto Nurseries, DeSoto City, Fla.

CITRUS SEEDLINGS, all root stock varieties. $10.00 per 1000 up. Grand Island Nurseries, Eustis, Fla.

SEED—Rough lemon, sour orange, cleopatra. New crop from type true parent trees. Also thrifty seedlings. DeSoto Nurseries, DeSoto City, Florida.

BUDDED trees new Florida commercial lemon, proven, thin skinned, juicy, scab immune. Also rough lemon, sour orange and Cleopatra seed and liningout seedlings. DeSoto Nurseries, DeSoto City, Fla.

SEEDS—ROUGH LEMON, SOUR ORANGE, CLEOPATRA. Pure, fresh, good germination. Also seedlings lineout size. De Soto Nurseries, DeSoto City, Fla.

CROTALARIA SPECTABILIS—Seed for sale. New crop, well cured, bright and clean. Price 25c per pound in 100 pound lots and over, 30c per pound in less quantities, f.o.b. Hastings, Bunnell, Lowell and San Antonio, Florida. F. M. LEONARD & COMPANY, Hastings, Florida.

WANTED—Position as packing house foreman; in citrus business twenty-five years; ten years' experience as foreman; married man. J. R. Henry, Okahumpka, Florida.

CHOICE SOUR ORANGE SEEDLINGS for fall planting, very desirable stock. S. G. Coburn, Dade City, Florida.

IF suffering with Piles, I want to help you. Drop me a line explaining.
Fred C. Whitney
317 6th Ave., Des Moines, Iowa

SOME NEW ASPECTS OF GUMMOSIS AND PSOROSIS OF CITRUS TREES IN FLORIDA

(Continued from page 19)

the time they usually call for assistance and one would have to perform miracles to render any material assistance at that late stage. The proper treatment of trees that have begun to decline from either gummosis or psorosis calls for the axe and the grubbing hoe rather than for the specialist.

On the basis of several years of experience with the bark disease problem of citrus trees it is quite apparent that growers are simply storing up trouble for themselves when they neglect to properly treat pruning and other wounds with some good durable dressing that is safe to use. Such treatment would not only obviate the development of many cases of gummosis that have their inception through these channels, but would at the same time prevent the entrance of organisms which cause wood decay, and which all too frequently cause the average length of life of trees to fall far short of that which might be expected when the trees are properly cared for in this respect.

CITRUS FRUIT BUDS AND SOME FACTORS INFLUENCING THEIR DIFFERENTIATION

(Continued from page 3)

chemical composition of the trees subjected to such treatment. The chemical composition of the trees in any district will be determined largely by the climate and soil type met with.

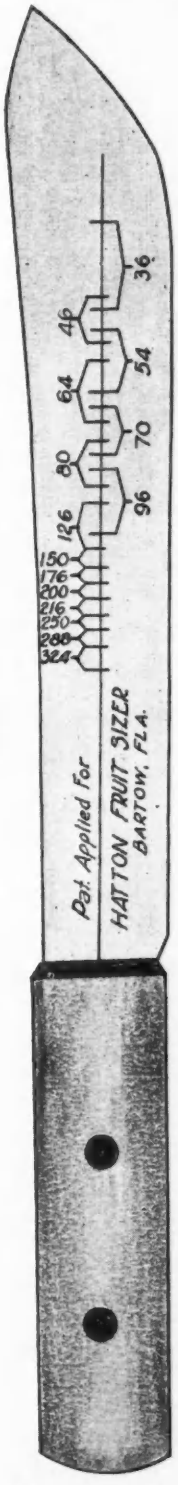
In view of the evidence now at hand it would seem that the citrus tree should enter the dormant period in the fall of the year in a healthy, well fed condition, in order to insure sufficient storage of food materials in order to differentiate blossom buds for the next crop.

VOLUSIA GROWERS SPRAY

Volusia County growers are taking a greater interest in quality citrus fruit, and the amount of spraying done has increased by 300 or 400 per cent this year, says County Agent F E. Baetzman, DeLand. Six spraying machines have been purchased since the beginning of the year, the agent reports. Quality of fruit is much improved.

Native grasses are considered superior to foreign grasses in controlling erosion, says H. H. Bennett, chief of the Soil Conservation Service.

A Simple, Effective, Accurate FRUIT SIZER



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Has been successfully developed in the HATTON FRUIT SIZER.

This knife first placed on the market three seasons ago has proven highly popular with packing houses and grove operators — supplying a need not heretofore satisfactorily cared for.

Made of the finest grade Stainless Steel the knife holds a keen edge. It's 7-inch mirror finished blade is firmly riveted to a smooth stained hardwood handle.

Designed for maturity testing the blade has etched on it citrus fruit sizes from 36 to 324 and this season also carries the juice content chart.

It is the most accurate Handy Fruit Sizer yet developed and is endorsed by leading citrus men. Has been used by State Green Fruit Inspectors the past two seasons.

It is fully guaranteed as to accuracy, workmanship and quality.

PRICES

Single Knife - -	**$2.00**
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In order to secure prompt delivery we suggest that you place your orders immediately.

HATTON FRUIT SIZER
BARTOW, FLORIDA

FEDERAL ISSUES HIT NEW PEAKS IN BOND TRADING
New York Retail Sales Above 1935
Rising Steel Production Fails to Keep Pace With the Demand
Star Gazers See Good Times Ahead For World in 1937
1936 Radio Sales May Set Record
July Brings New Securities Total To $3,027,827,000
PROSPECTS ARE BRIGHT ON ALL SIDES
STOCKS GO UP ON GOOD NEWS OF INDUSTRIES
Dun & Bradstreet Report Good Retail News
Retail Advertising Increases 11.6 P.
Rural Retail Sales Well Above July '35; Far West Gain Best
Power Men Forecast Boom Near in Use of Electricity
Steel Operatio
Highest for Si
Years Last Week
ICE MEN ARE OPTIMISTIC ON BUSINESS
Gold Assayed Tops 1935 by $2,000,000

SO it is natural to assume that the citrus market this fall will be well above the average.

Good fruit, full of juice, satisfying to the taste and pleasing to the eye, should bring unusually attractive prices.

It will pay you to see that your fruit measures up to the highest standard of quality.

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It costs nothing to investigate — our slogan is known by hundreds of Florida citrus growers to be based absolutely upon facts.
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YOUR GROVE

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Tampa, Florida

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Features In This Month's Issue

U. S. Government Will Buy Florida Surplus Citrus Crop

Four Years Of Citrus Products Research In Florida
By Harry W. von Loescke

The 1936-37 Program Of The Florida Citrus Commission
By D. E. Timmons

The Horticultural Protection Service Prepares For Another Season
By E. S. Ellison

"Dad" Lee Tells Of Citrus Prospects

Autogiro Scouting Effective In Control Of Plant Insects

Judge Tilden Heads Florida Citrus Exchange

Controlling Grasshoppers In Orange Groves
By J. R. Watson

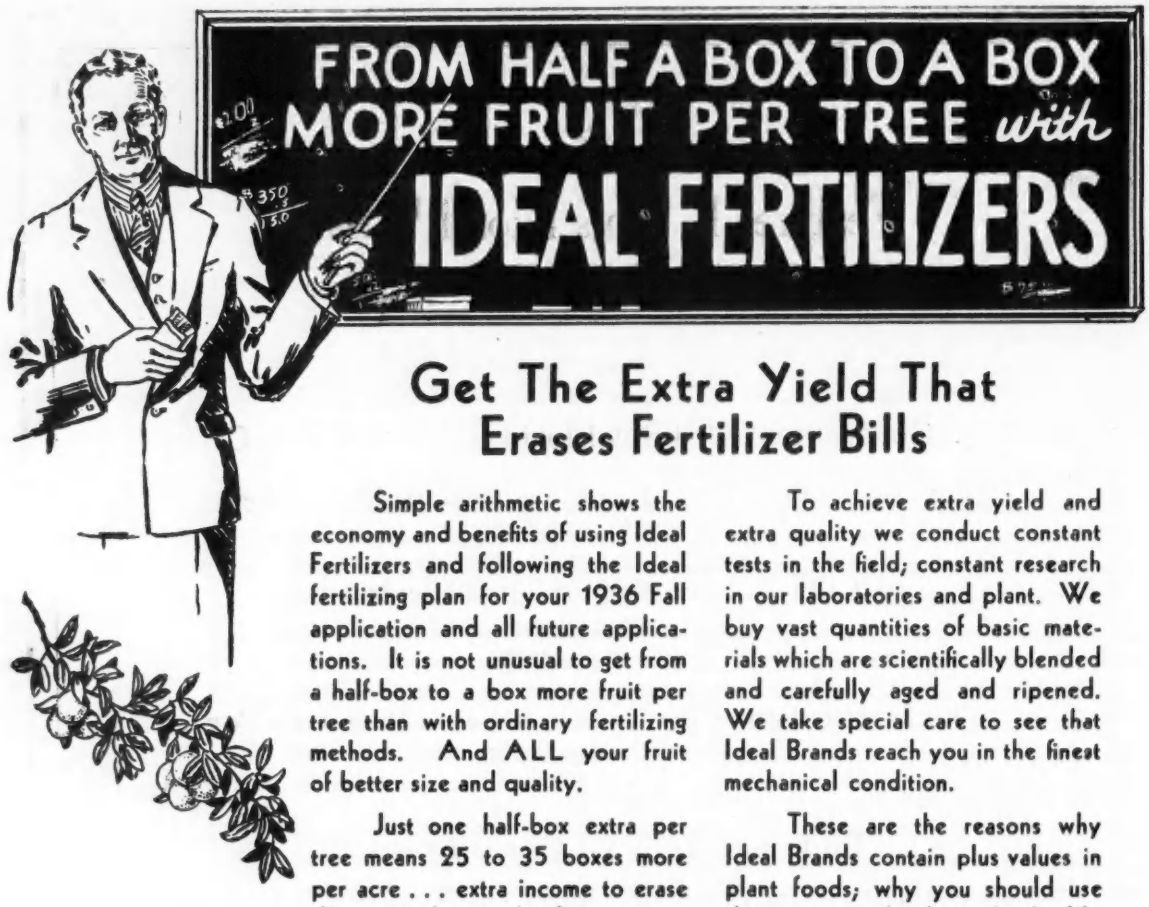
Relationship Of The Soil Conservation Program To The Agricultural Extension Service
By A. P. Spencer

Activities Of The Florida Citrus Commission

Pratt Forecasts 17,000,000 Box Grapefruit Crop

Irrigation Proves Value For Groves, Truck Farms

Rail Lines Promise Rate Reduction
Editorial



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Simple arithmetic shows the economy and benefits of using Ideal Fertilizers and following the Ideal fertilizing plan for your 1936 Fall application and all future applications. It is not unusual to get from a half-box to a box more fruit per tree than with ordinary fertilizing methods. And ALL your fruit of better size and quality.

Just one half-box extra per tree means 25 to 35 boxes more per acre . . . extra income to erase the cost of your fertilizer, to say nothing of the extra profits of a premium quality crop.

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The extra measure of yield from Ideal Fertilizers has made them preferred by successful growers for more than 40 years. And results like this are the ideal we are determined to maintain.

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These are the reasons why Ideal Brands contain plus values in plant foods; why you should use these superior fertilizers for healthier, hardier trees, better quality and an extra half-box or more fruit per tree when the crop matures.

A WINNING TEAM

For extra yield, quality fruit and healthier trees — IDEAL FERTILIZERS. For insect and disease control — IDEAL Sprays and Insecticides made by the Florida Agricultural Supply Company, Orlando.

FREE » » New Fall 1936 citrus booklet, "The Soil and the Tree in the Citrus Grove", contains precise recommendations for the fall application and insect and disease control. Send for it!

WILSON & TOOMER FERTILIZER COMPANY
JACKSONVILLE, FLORIDA

IDEAL *fertilizers*

MOST VALUE PER DOLLAR